DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-007899
Date Inspected: 21-Jul-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Clackamas, OR

CWI Name:	Mike Gregson, Jose Salazar			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3
Hinge-K Pipe Beam Assembly 102A-1: 7/21/09
a111-1 Forging to a110-1 Base Plate
QA Inspector noticed that all stiffener plates were tack welded and this assembly 102A-1 was sitting idle, pending transfer to the welding positioner for submerged arc welding on these PJP and fillet welds. See attached picture below.

Hinge-K Pipe Beam Assembly 102A-2: 7/21/09
a111-2 Forging to a110-2 Base Plate
QA Inspector witnessed welder #T23, Mr. John Tellone, performing FCAW tacking of various stiffeners on the PJP and fillet weld stiffeners to the a111-2 forging and a107/b106 stiffeners, in the vertical position. QA Inspector noticed QC Inspector Jose Salazar was present to monitor pre-heat temperatures and had recorded in-process welding parameters of 240 amps and 24 volts. QA Inspector noted that Mr. Tellone appeared to be in compliance

with the applicable welding procedure specifications (WPS 3048 & 3050).

Hinge-K Pipe Beam Assembly 102A-3: 7/21/09
a111-3 Forging to a110-3 Base Plate
QA Inspector noticed this assembly 102A-3 was sitting idle, with a pending non-critical weld repair.

Hinge-K Pipe Beam Assembly 102A-4: 7/21/09
a111-4 Forging to a110-4 Base Plate
QA Inspector noticed that OIW production personell were resuming grinding and weld clean-up, on the PJP and fillet welds stiffeners to a111-2 forging and a107/b106 stiffeners. QA Inspector previously spoke with lead QC Inspector Mike Gregson and Mr. Gregson explained that OIW production personell were blending the weld start/stops, removing weld spatter and repairing undersize welds in specific areas. Mr. Gregson also previously explained that once production personell were complete, OIW QC Inspector Jose Salazar will perform 100% visual examination of the PJP and fillet welds on these completed stiffeners and potentially mark up additional areas of these welds for cleaning, including excessive undercut, overlap, weld spatter, etc., in accordance with AWS D1.5. QA Inspector noted that once the visual testing is complete and acceptable, OIW QC Inspectors will be performing 100% magnetic particle testing, in accordance with AWS D1.5 and contract requirements.

Hinge-K Pipe Beam Fuse Assembly 120A-7: 7/21/09
a124-5 Half Fuse to a124-15 Half Fuse
QA Inspector noticed the submerged arc welding on the CJP (AWS D1.5 B-U3c-S) weld splice, sub-assemblies identified as (a124-5/a124-15), weld joint identified as WM3-18, for fuse assembly 120A-7, had been previously completed and QC Inspector Rob Walters had performed 100% final ultrasonic weld inspection and this assembly 120A-7 was sitting idle. QA Inspector reviewed the applicable ultrasonic testing report, after completion of the ultrasonic weld inspection and noted that Mr. Rob Walters had performed the inspection utilizing a 60 and 70 degree transducer angle on the exterior (face “A”) and a 60 degree transducer angle on the interior (face “B”) and found no rejectable indications. QA Inspector noted that Mr. Walters appeared to be in compliance with AWS D1. 5 and contract requirements.See attached picture below.

Hinge-K Pipe Beam Fuse Assembly 120A-8: 7/21/09
a124-8 Half Fuse to a124-16 Half Fuse
QA Inspector noticed that the half fuse sub-assemblies, identified as piece marks a124-8 & a124-16, had been previously fit up and tack-welded by OIW production personell and was sitting idle. QA Inspector noted that the weld joint was a CJP AWS D1.5 B-U3c-S and the welding procedure specification (WPS 4020) would be utilized during the FCAW/SAW process in accordance with AWS D1.5 and approved OIW contract requirements. QA Inspector noticed that QC Inspector Mike Gregson and Jose Salazar were present, on this date, to monitor welding parameters (amps/volts) and pre-heat temperatures, prior to welding on this CJP splice.

OIW Fabrication Shop-Bay 6 (ESW Overlay Process)
Hinge-K Pipe Beam Fuse Assembly 120A-1: 7/21/09
a124-6 Half Fuse to a124-7 Half Fuse
QA Inspector noticed that the first ESW stainless steel overlay passes were 100% complete and this fuse assembly 120A-1 was sitting idle. QA Inspector noted the first layer passes were completed utilizing the 309L consumable strip and the remaining second & third layer passes would be completed utilizing Soudokay brand Soudotape 316L

stainless steel consumable strip, per contract requirements. See attached picture below.

Hinge-K Pipe Beam Fuse Assembly 120A-2: 7/21/09
a124-3 Half Fuse to a124-11 Half Fuse
QA Inspector noticed this fuse assembly 120A-2 was sitting idle, pending 100% final magnetic particle testing on the exterior machined surface by qualified OIW QC personnel. QA Inspector previously spoke with QC Inspector Mike Gregson and Mr. Gregson explained that the exterior magnetic particle testing would be performed as soon as OIW production personnel place this assembly on the automated rollers. Mr. Gregson also explained that once the magnetic particle testing was complete, QA Inspector would be notified and QA Inspector will then perform approximately 10% magnetic particle testing, on the exterior machined surface, of this fuse assembly 120A-2. See attached picture below.

Hinge-K Pipe Beam Fuse Assembly 120A-3: 7/21/09
a124-12 Half Fuse to a124-10 Half Fuse
QA Inspector noticed that the stainless steel overlay welding (ESW) was previously completed on this fuse assembly 120A-3 and was sitting idle, pending transport to AG Machining for final machining.

Hinge-K Pipe Beam Fuse Assembly 120A-4: 7/21/09
a124-13 Half Fuse to a124-4 Half Fuse
QA Inspector noticed that the stainless steel overlay welding (ESW) was previously completed on this fuse assembly 120A-4 and was sitting idle, pending transport to AG Machining for final machining.

Hinge-K Pipe Beam Fuse Assembly 120A-5: 7/21/09
a124-2 Half Fuse to a124-14 Half Fuse
QA Inspector noticed this fuse assembly 120A-5 was sitting idle, pending the ESW overlay process. See attached picture below.

Hinge-K Pipe Beam Fuse Assembly 120A-6: 7/21/09
a124-1 Half Fuse to a124-9 Half Fuse
QA Inspector noticed this fuse assembly 120A-6 was sitting idle, pending the ESW overlay process. See attached picture below.

Material, Equipment, and Labor Tracking
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 6 OIW production personnel and 2 QC Inspectors

Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

WELDING INSPECTION REPORT

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Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer